Archaeology, Property, and Prehistory
Author(s): Timothy Earle
Source: *Annual Review of Anthropology*, Vol. 29 (2000), pp. 39-60
Published by: Annual Reviews
Stable URL: http://www.jstor.org/stable/223414
Accessed: 10/06/2009 16:26

Your use of the JSTOR archive indicates your acceptance of JSTOR's Terms and Conditions of Use, available at http://www.jstor.org/page/info/about/policies/terms.jsp. JSTOR's Terms and Conditions of Use provides, in part, that unless you have obtained prior permission, you may not download an entire issue of a journal or multiple copies of articles, and you may use content in the JSTOR archive only for your personal, non-commercial use.

Please contact the publisher regarding any further use of this work. Publisher contact information may be obtained at http://www.jstor.org/action/showPublisher?publisherCode=annrevs.

Each copy of any part of a JSTOR transmission must contain the same copyright notice that appears on the screen or printed page of such transmission.

JSTOR is a not-for-profit organization founded in 1995 to build trusted digital archives for scholarship. We work with the scholarly community to preserve their work and the materials they rely upon, and to build a common research platform that promotes the discovery and use of these resources. For more information about JSTOR, please contact support@jstor.org.

Annual Reviews is collaborating with JSTOR to digitize, preserve and extend access to *Annual Review of Anthropology*.

http://www.jstor.org

Annu. Rev. Anthropol. 2000. 29:39–60
Copyright © 2000 by Annual Reviews. All rights reserved

ARCHAEOLOGY, PROPERTY, AND PREHISTORY

Timothy Earle
Department of Anthropology, Northwestern University, Evanston, Illinois 60208; e-mail: tke299@northwestern.edu

Key Words landed vs moveable property, institutional vs private property, territoriality, alienation, marking

■ **Abstract** Property determines exclusive rights to things. It is a key theoretical concept in the social sciences and a material reality in human societies. Since the defining work of Lewis Henry Morgan, property has been studied by anthropologists interested in human economies, societies, and social evolution. Cross-cultural studies suggest systematic associations of contrasting property rights with particular characteristics of social institutions and resource developments. From the works of Childe, Adams, and Renfrew, archaeologists have considered property as related to ecological concepts of territoriality and to Marxist concepts of control and alienation. Techniques to study property archaeologically included patterns of labor investment, warfare, settlement distributions, and physical marking. Although each technique is open to alternative interpretations, combining the techniques provides a robust description of property regimes in prehistory.

INTRODUCTION

Property is a key concept and behavioral mechanism to limit and direct the use of things. To understand the different systems of economy, social relations, and value in human societies, one should describe how property rights vary cross-culturally. People think and act through objects, architecture, and landscapes, and these things are attached in differing ways to individuals and groups. Natural resources, tools, products, and at times people are subject to property rules (Hunt 1997), property materializes interpersonal relationships (DeMarrais et al 1996), and built landscapes particularize social identities (Solomon 1991).

The comparative study by Morgan (1877), which helped define American anthropology, placed heavy emphasis on property, and prior to World War II, most ethnographies included chapters on material culture, land tenure, and inheritance, for which property issues were central (Barton 1919, Firth 1939, Malinowski 1935). Cultural anthropologists, such as Herskovits (1940) or Hoebel (1954), devoted major chapters to economic and legal concepts of property and land tenure. Property, now less studied by anthropologists, is considered primarily by economic

0084-6570/00/1015-0039$14.00

anthropologists and more rarely by archaeologists (Hann 1998, Hunt & Gilman 1998).

I review different research directions that deal, often indirectly, with property in prehistory. I (*a*) highlight the theoretical significance of property in both materialistic and institutional approaches to human societies and their long-term histories, (*b*) provide case examples of the primary importance of property in several protohistoric societies, and (*c*) explore how archeologists describe property relationships without a written record.

WHAT IS PROPERTY?

Property determines exclusive rights to things. The core of property is the right to exclude (North 1981). As considered by cultural anthropologists, property exists in all human societies, restricting rights of use, allocation, and/or transfer (Herskovits 1940; Hoebel 1954; Hunt 1997, 1998), but because economies are instituted differently in each historical case, the only pan-cultural concept of property might be equivalent to "Keep your cotton pickin' hands off my [whatever]" (Neale 1998).

A common definition of property is twofold: something possessed, and the exclusive right to hold, use, and/or dispose of that something. Economists and legal scholars have an extensive literature on property that argues for its fundamental importance in human societies (Demsetz 1967, Hallowell 1943, Munzer 1990, North 1981, Waldron 1988), whereas a substantivist minority argue that private property, of usual concern to economists, is a western concept, uniquely modern, and tied to emergent capitalism (Bell 1998, Neale 1998).

Within anthropology, one debate concerns whether property should only involve legally established rights. Ethnographers seem to agree that property involves "some jural entity that has rights and duties over some objects (of property) against other jural entities" (Hunt 1997). Archaeologists, however, argue that property encompasses material use, allocation, and transfer that do not require a jural definition; pragmatically, archaeologists must understand the materiality of human social life (DeMarrais et al 1996, Earle 1998, Fletcher 1995). Codified laws of property can be considered as but one mechanism through which objects and land relate behaviorally to people's use, allocation, and transfer. Property is integral to all concepts of social institutions—how people are related to resources and to each other. All rights are defined, legitimized, and enforced within institutional frameworks that determine power relationships in and between social groups and individuals. How people articulate to ("own") objects and land is assumed to be highly variable, and archaeologists seek to explain this variation across time and space with our comparative prehistory and historic evidence.

A distinction is drawn between landed property and moveable property (Edzard 1996, George 1879, Hudson 1996). Land is inherently set in space, which means people must move to it; however, land is improved by social labor. Property in land can be discussed with the broader concept of territoriality (Bintliff 1999, Dyson-Hudson & Smith 1978), and the emergence of social groups can in part be explained

by a need to defend and allocate land (Johnson & Earle 1987). Property rights in land are secured primarily through original possession, improvement, inheritance, and conquest. Ownership is often based on claims of first possession (McAnany 1995) and of improvements, such as clearing and fencing a field, that change future returns (Earle 1980a, North & Thomas 1977). The "mixing of a person's labor" with natural resources creates cultural things with property rights attached (Gilman 1998, Hunt 1997). Inheritance involves transfer of land at death between socially related individuals that results in social continuity (Goody 1976, Netting 1993). Social groups must maintain control of land, and this control is usually manifest in inheritance rules. Land can also be seized in wars, and the defense of landed property is probably one of the underlying causes for the development of social institutions (Johnson & Earle 1987). Exchange of land may involve transfer by gambling and through market sale (Hunt 1998). Sale of land, typically involving payments in currency or other wealth, is rare in traditional societies and may relate to market and debt systems (George 1879; Hudson 1996, 1998).

Moveable property is created in ways similar to landed property, but its history is different. Objects are made, and we can assume that the dedication of a person's effort to creating an object is based on assumed rights in the finished product. From early in human history, because moveable goods are just that, moveable (Edzard 1996), the development of exchange requires the alienation of property (Hunt 1998). Goods, like land, are inherited, and the loss of rights at marriage may be compensated for by bride wealth or dowry transfers (Goody 1976). Thefts frequently transfer ownership forcefully (Hunt 1998), such that raiding (vs trading) characterizes pastoral (Sweet 1965), warrior-based (Durrenberger 1998, Hedeager 1994), and trading societies (Junker 1999).

Typologies of property have been suggested by anthropologists that include open access, commons, institutional property, and private property (Earle 1998, Gilman 1998, Hunt 1997). A distinction is often made between public property, lands owned by institutions such as royal lands and temple estates, and private lands associated with individuals and corporations (Hudson 1996, Levine 1996). Property can be considered as alienable (transferable from person to person) or inalienable (Weiner 1992). Systems of property rights are embedded within the formal and traditional rules of institutions that protected, defended, and controlled use and transfer of resources and material symbols (Johnson & Earle 1987). Dynamic relationships exist between social institutions and property rights in land and in moveable things. Because any society is composed of various institutional forms with conflicting and coordinating interests, associated property rights are often contested and ambiguous.

THEORIES OF PROPERTY WITH APPLICATIONS TO ARCHAEOLOGY

Evolutionary studies of property can explain variations in how rights to things are patterned. Classical and neoclassical economic theories, ecological theories, and

political economy theories have been proposed by social scientists who predict specific reasons why property rules developed and influenced social evolution. These can be tested and refined by archaeology.

Classical and neoclassical economic theory predicts specific evolutionary changes in property rights through history (Hunt 1997). From Adam Smith's original formulation, the gains in the wealth of nations that characterized the emerging economic power of northern Europe are thought to derive from increasing efficiencies of specialization and exchange. In the liberal paradigm, the creation and maintenance of private property (as opposed to public property) rights was promulgated as necessary. For individuals to invest in land or other enterprises, rights to future returns had to be guaranteed. Nineteenth- and twentieth-century economists argue that a lack of private property in traditional societies caused economic underdevelopment; individuals simply would not work hard unless their added work produced personal benefits. The certainty of property rights should determine rates of saving and capital formation (North 1981), such that the Neolithic revolution may reflect an increased labor productivity in agriculture linked to new rights in property (North & Thomas 1977:232). As population grew and local production levels necessarily expanded, communal property would have made local investment in agriculture, with delayed returns, attractive in comparison to exploiting the diminishing returns of wild foods (Earle 1980a).

New economic historians (Demsetz 1967; North 1981, 1990; Williamson 1985; but see also Neale 1998) argue that the historical development of institutions can be explained in part by extending a neoclassical analysis to the value gain by institutional arrangements within firms and the state itself. Expanding efficiencies, resulting from increased specialization and exchange, also create substantial transaction costs from unpredictable supplies, political distortions, imperfections (and distortions) of information, and dishonesty. Business firms were created to offset these transaction costs by regularizing the flows of material and information within internally specialized institutions. The development of the state and other political institutions with a preponderance of force may then be organized by humans to guarantee systems of property by militarily establishing peace and resolving disputes with a legal system (North 1981). A contract theory of institutions may explain the evolution of an overarching political system as a means of lowering transaction costs.

Although ethnographers have used concepts from institutional economics (Acheson 1994) and behavioral ecologists have shown interest in its application to human organization (Byrne & Brown 1998), serious use in archaeology has been modest. One thorough analysis explains the development of specialized flint sickle production during the Danish Early Bronze Age as an outcome of (and perhaps incentive for) the development of an overarching chiefly political organization (Steinberg 1997). Regional chiefdoms would have established a regional peace and regularized rules of property and, thus, allowed for the development of larger-scale specialized production with corresponding increased efficiencies.

Ecological anthropology theories develop a similar argument that competition and warfare require group leaders, tribal sodalities, or chiefdoms to guarantee rights of resource use (Johnson & Earle 1987, Sahlins 1968). Population growth and increased competition create a need to regularize access to resources (Feil 1987, Johnson & Earle 1987). Carneiro's (1970) circumscription theory sees population growth as causing warfare and circumscribing individual options. Groups were tethered to specific localities, and an expanding state could thus control them. Private property may develop with intensification of farming and the stable association of particular plots with individual families (Collier 1975, Netting 1993). Using Human Relations Area Files, Adler (1996) shows that cross-culturally, multihousehold ownership associates with moderate levels of agricultural intensification. Unstable ecologies, unable to be intensified, may require territorial "collective" control by groups formed along ethnic divisions (Stone & Downum 1999). Property can be seen as a cultural manifestation of territoriality that develops to defend and regularize rights to scarce and valued resources. Resource distribution (predictable/unpredictable, dense/scarce) and its economic defensibility (high/low) may explain variation in territorial defense, possible control, and the land-tenure regimes (Dyson-Hudson & Smith 1978).

Using ecological theories, processual archaeologists applied competition/defense models to understanding cultural and social changes in prehistory. From the 1970s, examples of territorial explanations of changing property rights represent a major line of argument in archaeology. Initiating a much-used approach to burial practice, Saxe (1970) and Binford (1971) argued that the development of cemeteries in the Neolithic was associated with local, corporate groups. Cemeteries materialized the groups and established territorial claims. The seminal studies of burial monuments in southern England argued that the burials were social and territorial markers in an increasingly competitive political world (Fleming 1973, Renfrew 1973). Burial monuments provided a visible and permanent territorial statement by groups and individuals whose ancestors were interred in that landscape (Chapman 1981; Earle 1991; O'Shea 1981, 1996; Renfrew & Shennan 1982). The construction of other landscape markers included field borders, such as the famous reaves of Dartmoor (Fleming 1989), cairns, and other perimetric or boundary features (Gleason 1994, Stone 1994) that defined territory in an increasingly competitive world. Population growth and the intensification of agriculture was seen as causing competition, warfare, and corporate group formation to exclude outsiders. In Europe, for example, Bintliff (1999) envisions a sequence of resource use driven by intensification that resulted in the progressive development of territoriality and property in land. Although property as a jural concept is by definition limited to humans (Hunt 1997), property as the broader concept of defended rights to things has important evolutionary implications for cultural ecology.

Political economy theories focus on the significance of property in the evolution of social stratification and complex political institutions such as chiefdoms and states. In the political economy literature, property has central and pivotal roles. The seminal work of Morgan (1877) and Engels (1972 [1884]) argues that

ownership of capital allows the alienation of products from those who invested labor in their making; conversely, dealienation requires the establishment of a communist order to establish public ownership by all. Based on historical and archaeological evidence, complex societies rested on the development of property rights well before capitalism. Tributary economies of both chiefdoms and precapitalist states require alienation of value to finance stratification and institutional elaboration (Wolf 1982). The emergence of the state was an outcome of social stratification in which the ruling institutions defended differential access to or ownership of strategic resources by military means (Fried 1967). A long-term, worldwide trend toward intensification can be seen as creating a productive base that is more easily controlled by ownership of the most productive land. This land has been developed with technological facilities that become owned by ruling institutions (Johnson & Earle 1987).

From the late 1970s, an increasingly fused processual-Marxist archaeology (Earle & Preucel 1987, Spriggs 1984), committed to a comparative approach (Gilman 1998), has emphasized the importance of property in developing political economies; central power, whether comparatively strong or weak, arises from property rights in land, productive technology, and moveable wealth (Brown 1981). Many trace their intellectual roots to Childe (1942) and Adams (1966), both of whom foreground ownership of irrigated land, wealth, money, and slaves as critical for developing social stratification in the ancient Middle East (Gilman 1998). In a series of articles and books, a group of processual archaeologists emphasized that elite ownership (and the corresponding ability to extract tribute from commoners) was basic to the emergence of social complexity. Earle (1991) argues that the evolution of social stratification in chiefdoms rests on the articulation of property rights by which chiefs control staple production and the distribution of wealth. Elite control through ownership involved irrigation and dryland systems in Hawaii (Earle 1978, 1980b; Kirch 1994) and Spain (Chapman 1990, Gilman 1976, Gilman & Thornes 1985), textiles and land in Mesoamerica (Brumfield 1980, 1987; Carrasco 1978), metal wealth in Bronze Age Britain (Bradley 1984) and Scandinavia (Kristiansen 1987), and agrarian estates in Iron Age Scandinavia (Hedeager 1992, Thurston 2000). The military, and its ability to seize and defend resources controlled by ruling institutions and individuals, was critical for state formation in the Andes (Haas 1982) and for the complex chiefdoms of Hawaii (Earle 1978, 1997). Research has focused on "the general trend towards increasingly restrictive property rights as it relates to the emergence of institutionalized inequality" (McAnany 1998).

Concerning moveable property, processual and postprocessual archaeologists have considered the alienability of objects, a concept inherently linked to ownership. Marx considered alienation as an outcome of capitalist wage labor through which workers' rights to their produce are expropriated by the owners of capital. But were objects inalienable in noncapitalist economies? "Inalienable" objects are so closely associated with an individual or social status that they could not be transferred without significant loss/gain of status (Weiner 1992); presumably,

conditions limiting exchangeability of special objects reflect institutional controls over access to them (Brumfiel & Earle 1987). Other studies, however, indicate that special objects can be alienated through exchange, which suggests individual ownership with rights of transfer (Gell 1992). Such objects were obtained by chiefs in exchanges across considerable distances, and objects were associated with powerful esoteric knowledge for which chiefs competed (Helms 1979).

A broad literature documents how social status can be accumulated through prestige goods exchange (Friedman & Rowlands 1977). The display of wealth, as in burials or ceremonies, is based on an implicit belief that individual aggrandizers, households, and social groups accumulate and own wealth differentially (Hayden 1995). Ownership of wealth provides a symbolic/social capital for political control (Smith 1987). In historical archaeology, wealth has been documented in both wills and artifact inventories, and models of consumer behavior in colonial and postcolonial America have been used to explain how access to specific objects through markets and other networks created opportunities to accumulate wealth and to use its restricted access to express social stratification or, alternatively, resistance (Gibb 1996, Spencer-Wood 1987).

CASES OF PROPERTY REGIMES WITH AN EVOLUTIONARY PERSPECTIVE

A challenge exists for archaeology: to be able to investigate how property rights affect and are affected by the evolution of social institutions (Gilman 1998). Based on the ethnographic literature, social evolution can be categorized heuristically as having overlapping institutional scales of organization: the family level (bands), local groups (tribes), chiefdoms, and states (Johnson & Earle 1987, Service 1962). Specific forms of property can be associated with increasingly broad levels of integration (Earle 1998, Gilman 1998). Archaeologists and ethnoarchaeologists have been studying property, and their results suggest systematic variation. Some of this variation in property rights appears to link to subsistence intensification and institutional defense of resources. Other variation cross-cuts differences in social complexity with contrasting property rights supporting alternative ways to mobilize goods.

Societies organized at the family level (bands) maintain a subsistence economy based on foraging and/or low-intensity shifting cultivation in marginal environments (Johnson & Earle 1987). Territories are typically not carefully marked or defended by organized warfare, but a strong association exists between a local camp and its home range. Territory can be considered a social space (Cashdan 1983), and ethnoarchaeological work among the !Kung San, for example, shows that social distinctions reinforce reciprocal access to foraging ranges (Wiessner 1982). Rock art, commonly executed by foragers, transforms locations into cultural places associated with the ritual power and knowledge held exclusively by bands or individual shamans (Bradley 1998a). Stylistic elaboration of special artifacts, presumably owned by individuals, may well signal membership in groups that

exclude nonmembers from productive resources (Gilman 1984). As in pre-California (Ericson 1981), the breadth of exchange in forager economies required the socially accepted alienability of moveable goods.

Local groups (tribes) depend on agriculture or intensively foraged wild resources. Settlements typically consist of villages or hamlet clusters, occupied permanently or seasonally close to fields or other prime subsistence resources. In terms of property, a dynamic relationship emerges between group and individual rights. Local groups are organized as corporate kin groups (clans or lineages). Based on ethnographic analogy, these kin groups are corporate, meaning they own or at least defend land as a group (but see Appell 1983). Use rights in a plot were held for as long as it was farmed by the individuals who improved it. Household tenure is private for all intents and purposes (Adler 1996, Fernández-Posse & Sánchez-Palencia 1998, Netting 1993), except of course that the land cannot be alienated outside of the group. Lands are often marked by special boundary ceremonies, fencing, placement of villages, and/or cemeteries associated with the communities (Johnson & Earle 1987). The prevalence of warfare posits a need to defend territory (Keeley 1996). The exchange and accumulation of wealth in objects, as in Neolithic and Bronze Age Europe, suggest personal ownership that measures individual status and social relationships (Kristiansen 1984). "Gifts" of these objects are critical in social processes involving marriage, death, injury compensation, and aggrandizer displays (Hayden 1995).

Chiefdoms are regionally organized polities characterized by emergent stratification, which by definition is based on differential access to (ownership of) productive resources and moveable wealth (Earle 1991). Subsistence can be quite variable; examples emphasize intensified agriculture but also pastoralism and some complex foraging (Earle 1987). Variation among chiefdoms is a focus of processual research, and variation in economy and politics has been related to differences in property rights. The financial base of chiefdoms may include corporate strategies by which institutional ownership of land underlies staple finance versus networked strategies by which elite ownership of symbolic objects underlies wealth finance (Blanton et al 1996, Earle 1997, D'Altroy & Earle 1985, Friedman & Rowlands 1977).

For corporate strategies of finance and control, principles of landed property are essential. The most commonly described pattern is based on overlapping stewardship. A community's land is similar to the commons held by a local group and used by individual families; however, the lands are owned and managed by the chief, who mobilizes a rent in labor and staples used for institutional support (Earle 1997). A constructed landscape with agricultural facilities, monuments, hedgerows, and walls defines corporate hierarchies with overlapping relationships of people to resources. Land is held institutionally but allocated to individuals for their use.

Protohistoric Hawaiian chiefdoms (Earle 1997) were divided into classes whereby commoners received productive use rights in return for labor obligations to chiefs. The paramount chief of an island was its sovereign, and when he took office by inheritance or war, he allotted communities as fiefs to his closest supporting

chiefs, whose land managers (lower-ranking chiefs) organized the production of the surplus that supported the chief and the paramount overlord. Land tenure was corporate and institutional, owned and allocated within the chiefly structure and marked by a built landscape (Kolb 1997). The intensified agriculture included irrigation facilities (Earle 1980b) and dry land facilities (Kirch 1994) that defined by walls and terraces the stable farming units of commoners and chiefs (Earle 1998). Stone platforms and enclosed shrines corresponded with the institutional and hierarchical forms of institutional ownership (Kolb 1994).

The chieftains of Iceland illustrate a contrasting pattern of landed property (Durrenberger 1998). All land was owned individually by chieftains and free farmers and buttressed by legal codes and procedures for dispute resolution (Byock 1988). A person's ability to hold onto his farm depended on the political bond to a chieftain who could guarantee, by force, ownership rights (Durrenberger 1998). The need to defend landed property rights was a basis for a chieftain's power, built by carefully managing images of warrior might (Earle 1997). In Scandinavia more generally, increasing social stratification during the Iron Age corresponded with increasingly clear private property rights in land, cattle, and wealth (Randsborg 1980, 1982). The earliest written law of Anglo-Saxon England concerned rights of ownership (Arnold 1982).

Ownership of moveable objects of symbolic significance typified many chiefdoms. Among the Hawaiian chiefdoms, objects, such as the feather cloaks and helmets, marked status within the institutional hierarchy; they were manufactured by attached specialists and transferred in ways similar to land (Earle 1997). Objects, however, were not fundamentally important for defining rank in these corporate chiefdoms; burials, for example, were not monumental or distinguished by rich goods. In Iron Age Scandinavia, social status rested on a display of wealth gained in raiding that measured a warrior's success (Hedeager 1994), and Viking burials clearly marked individual status differences by the size of the burial monument and by the personal wealth of weapons, fine jewelry, and elaborately carved wooden objects (Earle 1997).

In states, a complex and overlapping dynamic was created between governmental, community, and household ownership (Hudson 1998, Orejas & Sastre Prats 1999, Restall 1997; TN D'Altroy, unpublished data). The Inca empire of the prehispanic Andes was based largely on a corporate strategy with staple finance (D'Altroy & Earle 1985). The empire claimed ownership of all lands, but subsistence lands returned to the local community in return for corvée labor obligations. Open community lands were held as commons and allocated annually; improved lands were held and inherited by individual families. Special lands were held as part of offices of community leaders. Other institutional lands were held by the state, the Sun temple, and probably others. Such lands, newly improved by irrigation, drainage, and terracing, were physically distinctive from local lands (Costin 1998, Niles 1987, Wachtel 1977). Additionally, some personal estates were owned by the ruler and the aristocrats. These lands were claimed by rulers as part of the spoils of conquest and received as "gifts," confiscation, and winnings in games of chance (TN D'Altroy, unpublished data). A ruler's estate was maintained after

his death to support the personnel who cared for his corpse (Conrad & Demarest 1984). It is interesting that no market system or currency existed within the empire, and wealth was closely associated with (owned by) institutions and not extensively exchanged. Personal wealth was not distinguished; burials were not monumental and did not include unusual concentrations of wealth.

An interplay between public and private property underlay the complex social world of the Maya. The kin group, *cah*, lived close together and owned land together. Its leader helped manage the land and provided support in legal disputes over ownership (Restall 1997). Plots close to households were controlled by individual households for their own support (Robin 1999). Land ownership, by both lineages and individuals, was described relationally by the Mayan cardinal directions and by boundary marks that included trees, wells, stone mounds (often numbered and arranged linearly along a bound), and other features (Farriss 1984, Hanks 1990, Restall 1997). The land-tenure system is materialized by the clustering of houses around ancestral burials; the Maya lived with their ancestors, defining the lineage with ancestors and their land (McAnany 1995, 1998). Using Aztec pictorials in a traditional format, cadastral maps of the early Spanish period record ownership by groups and individuals, carefully measured and described to within 1 m (Harvey 1984, 1991; Williams 1984; Williams & Harvey 1988). Large estates owned by local nobles contrasted to small commoners' holdings. Although wealth served for tributary payments (Brumfiel 1980), it apparently could not be used to purchase land, which was distributed politically (Carrasco 1978).

The best evidence for the emergence of private property with the development of states is available for the Middle East, where complex categories of land ownership become discernible though an early written record (Diakonoff 1982; Gelb et al 1991; Hudson 1998; Hudson & Levine 1996, 1999; Postgate 1992). Lands were held "publicly" by institutions of government and temples and "privately" by extended families. Some of the earliest texts included boundary markers that record land transfers (Gelb et al 1991). Rights in both moveable and landed property were documented by a record-keeping technology that included seals and clay tablets held in public and private archives. City houses were bought and sold by a range of officials, land owners, and merchants (Van De Mieroop 1999). Monetary loans created debts that allowed foreclosure on lands, which created large private holdings by an upper class (Hudson 1998). This may show a general process of how monetarization of an economy results in the extending of markets in objects to land (Hudson & Levine 1996). As land became increasingly owned by a wealthy class, taxes in currency replaced corvée as the means for finance.

TO DESCRIBE PROPERTY RIGHTS ARCHAEOLOGICALLY

Significant advances by the processual ("new") archaeology of the 1960s and beyond have rested on a "methodological optimism" (Gilman 1998). Unwilling to accept the silence of ancient stones and sherds, processualists attempted to

generate middle-range theories that allow anthropological interpretations of observed archaeological patterning (Adler 1996). The previous section shows how archaeology, in conjunction with historical and ethnographic evidence, can develop rich descriptions of property rights and suggests likely connections between social evolution and land tenure. But the rich variation represented by prehistory cannot be described with these cases alone. Relying on the material record, archaeologists should develop ways to study variation in property regimes from region to region and across time. Ordered from general to more specific, four largely independent sources of archaeological evidence can be used to study property.

First, the improvement and movement of cultural objects provide general evidence of property rights. The investment of labor in the manufacture of objects and facilities assumes a future planning that presumably requires the restriction of rights of use and transfer (North 1981). A simple, although indirect, measure of property could thus be the labor estimated to make specific objects (Feinman et al 1981) and the intensification represented by various landscape facilities (Alder 1996). As studied by ethnoarchaeologists, the use-life of objects and facilities should also affect the importance of property rights. Exchange of objects and corresponding transfer of property rights have existed in all societies (Hunt 1998); however, archaeologists recognize that the amount and kind of exchange were highly variable, and this variation should correspond with evolving property rights in moveable objects (Earle 1999). Comparative advantage deriving from ecological and technological differences encouraged specialization and exchange (Shennan 1999) with probable elaboration of property rights in moveable property. Although the exchange literature has not been applied to property, potential exists for cross-case analyses.

Second, the patterning of warfare should correlate with emerging property rights. The development of warfare between villages was in part an outcome of agricultural intensification and the increased value of land. In the Neolithic, intensification would have required land tenure exclusions to protect investments (Johnson & Earle 1987, North 1981). The development of raiding presumes forceful intervention to deprive another of asserted rights in everything from women to valued objects and staples. The development of prestige goods economies is frequently linked to a warrior elite, which suggests that wealth was routinely "alienated" by raids (Junker 1999). Warfare is patterned and should correlate with conflicts over property rights between groups for which an overarching legal system does not exist. Conquest warfare has been seen as an outcome of the evolution of the state that seizes and defends rights in property held by the ruling elite (Haas 1982, Haas et al 1987). Similar arguments can be extended back to evidence for warfare among chiefdoms (Carneiro 1981, Earle 1997). Among chiefdoms, the evidence for warfare takes two contrasting forms: the development of a warrior elite with an elaborate set of fighting equipment, and the development of heavily fortified settlements (Collis 1982; Earle 1991, 1997; Fernández-Posse & Sánchez-Palencia 1998; Gilman 1998). Contrast in types of chiefly warfare may reflect different power strategies, each linked to different types of property—a network

strategy, as warrior elite raid moveable wealth in prestige goods, vs a corporate strategy, as groups and their leaders assert control over agricultural facilities like terraces and irrigation systems.

Third, restricted association and use involve the patterned distribution of people across the landscape and of objects with respect to people. Settlement pattern studies determine how human groups associate with specific resources, and in terms of territoriality (Bintliff 1999), settlement studies imply concepts of property in land. An approximation of property rights has been made using site catchment analysis (Vita-Finzi & Higgs 1970, Flannery 1976) and Thiessen-polygon analysis (Hodder & Orton 1976). Each technique associates land and its resources with settlements based on their spatial proximity. The development of a regular spacing of villages with associated agricultural land has been used to define village territories, or the land most likely to have been controlled by a village and its members (Bintliff 1999, Ellison & Harriss 1972). Calculating visible space from a site (view shed) and the intervisibility between sites helps define a prehistoric community (Waldron & Abrams 1999), with implications for land tenure. These analytical techniques, borrowed from geography, do not in themselves define property rights, but they do associate resources with groups (Adler 1996, Bintliff 1999).

The distribution of settlements in the landscape may reflect land-tenure rules. Changing land use in prehistoric and early historic Greece mirror known and inferred patterns of land tenure (Bintliff 1982). In both Mycenaean and late Archaic times, Greek elites owned private estates, the surplus from which financed their domination. Archaeologically, the settlement shift from villages to dispersed farms took place as agricultural production in the outfields was intensified to support the emerging elites (Bintliff 1982). At the end of the European Medieval period, the enclosure movement was associated with a dramatic settlement pattern change, but Johnson (1991) warns that such shifts cannot be read unambiguously from the settlement data. Using linked historical documentation, the changing patterns of land tenure associated with the rise of the Viking state in Sweden correspond well with a dramatic shift in the settlement and land-tenure rights (Thurston 2000). Long-term stability in farm locations, as in the Scandinavian case, probably documents the conservative effect that the state legal apparatus has on stabilizing differential control of productive resources. Conversely, changing settlement arrangements document social transformations and associated ownership dislocations.

Settlement excavations frequently associate the distribution of special objects with houses in an attempt to describe the degree of social differentiation and stratification. The differentiation of wealth, such as in decorative metal goods or elaborated pottery, can differentiate elite vs commoner households (Costin & Earle 1989) and track changing distribution of wealth in burial and household consumption (Gibb 1996, Haselgrove 1982, Smith 1987). Logically, the differential distribution of valued objects must reflect patterns of ownership, whereby certain sectors of society can control access to objects used to define status, prestige, attractiveness, and group identity.

Patterns of restricted use provide a reasonable proxy measure of property rights (Gilman 1998). In highland Peru, raw materials used in craft manufacture were claimed differentially. Locally produced Inca ceramics were made from clays and tempers distinctive from those used for local ceramics, which suggests that the communities and the state held distinct rights to raw materials (Costin 1998). Flannery (1976) advocates that to describe a settlement's catchment area, archaeologists should begin with the resources found in the settlement and extrapolate its catchment (owned territory) to the areas from which the goods would have been obtained. Of course, some goods could have been obtained through either trading or raiding, but the bulk of resources used by a local community derived from its lands (Earle 1999). For example, the local diet in pre-Inca Peru varied regionally from settlement to settlement based on differences in their catchments (Hastorf 1993); exclusive, or at least dominant, use of the catchment by its settlement is thus reasonable.

Fourth, marking of both land and objects involves the most direct, but not always unambiguous, assertion of property rights by individuals and groups. Marking of the landscape acts as a bounding of sections such as fields that can be described archaeologically with aerial photography (Gleason 1994). Based on an ethnoarchaeological study in Africa, perimetric (bounding) features "are constructed to mark boundaries (that is, to transmit information) and/or protect boundaries (that is, to control access)" (Stone 1994:317). The intensification of land use is associated with more explicit land-tenure rights that correspondingly are marked on a fairly permanent basis by physical construction, such as walls, rock piles and mounds, ditches, hedgerows, and the like (Adler 1996, Stone 1994). Although rarely considered systematically, these constructions format the landscape in ways that are easily recognized and remembered. Naming and more permanently marking features in the landscape with rock art socializes space with specific historical narratives and social functions (Barfield & Chippindale 1997, Bradley 1998a). Stone mounds, sometimes in lines, defined field boundaries among the Maya (Restall 1997). Land boundary markers functioned for thousands of years in Britain (Bowen 1975, Bowen & Fowler 1978, Spratt 1991). The elaborate Later Bronze Age coaxial wall and ditched divisions probably defined rights of use and access for grazing and farming (Fleming 1988, 1989), and the post-Medieval enclosure movement was materialized by hedges, fences, and ditches (Butlin 1982, Johnson 1991). The irrigation and field systems of prehistoric Hawaii, built with social labor, established rights of use and tribute collection (Earle 1997, 1998). Early examples of writing include stone inscriptions of the builder of a monument, owner of a field, or history of transfers (Gelb et al 1991, Morrison & Lycett 1994, Thurston 2000). These formatting devices are recognizable archaeologically and their construction can be dated by associated carbon, artifacts, or inscriptions. Other perimetric features may be less permanent, but their systematic use should still leave recognizable traces. Fence lines leave linear postmold traces, and hedgerows can be identified by trash and stones dumped along them (Stone 1994) and by plant pollen typical of hedgerows (Gleason 1994).

Burials, commonly the focus of archaeological investigations of social formations (Beck 1995; Brown 1971, 1995; Chapman 1995; Chapman et al 1981; O'Shea 1984; Saxe 1970), mark the landscape with specific forms of inheritance and associated property rights. For an analysis of property, one can suggest an association with types of burial—individual vs group burials, monumental vs flat graves, and distinguished social elites. Each burial practice should be associated with distinctive ceremonies that define groups and interpersonal relationships of inheritance that signify important property rights and their transfer (McAnany 1998). The corporate group may thus be given permanent form in the group cemetery (Saxe 1970), and highly structured burial practice may allow interpretation of the social form and associated property rights of communities (O'Shea 1996). Monumental burials focus attention on the group regionally, carry sacred information of group identity and place, and persist as genealogical markers in the landscape across generations (Bloch 1989, Bradley 1998b, Earle 1991, Fleming 1973, Renfrew 1973). Obviously such a visible and permanent marker is ideal to mark corporate or lineage rights of property.

Markings also include nonburial monuments. Part of the formatting of the Hawaiian landscape involved the constructions of the *heiau* shrines that were the focus of chiefly and community ceremonies (Kolb 1994). These monuments, and their associated rituals, are material bonds of individual chiefs and groups to specific locales. The land of Hawaiian community segments were defined by perimeter walls and shrines (Green 1980). By excavating and dating the monuments and other landscape features, it is possible to document how land divisions were built through time (Kolb 1997). The construction of such a heavily formatted landscape would seem to describe the land-tenure system—how corporate hierarchical groups were instituted with and materialized through ceremonies and the monuments.

Within settlements, the constructed landscape of houses, paths, walls, and monuments formats the localities of families and larger social groups. Perhaps most immediate is the significance of residential structures and the use of walls to create privacy and private spaces through obstructing the public gaze. Archaeologists can study how private space is demarcated in the fencing of farmsteads and yards and in the internal order of the buildings (Randsborg 1982, Hedeager 1992). An analysis of buildings helps describe how personal rights are defined and transformed at major social junctures; in the capitalistic transformation of property with land enclosure, the internal organization of residences then emphasized private spaces (Johnson 1991). In the Neolithic transition, villages became formalized in built spaces with paths, walls, and monuments that defined association among groups; the "intrinsic, structural fact of domestic life [was] the division between public and private" (Wilson 1988:167). Social relationships were made permanent in mud and brick, and these newly formalized relationships were most probably associated with more formalized property rights. Relationships of individual to groups that were inherent in corporate ownership were materialized in the building of the villages and cemetery complexes. Relationships between built spaces can institute social relations and formalize property relationships (Bernbeck 1995).

The growth of cities involved the aggregation of large human groups into limited areas such that individuals unknown to each other would have met daily in potentially hostile circumstances; city construction formatted the new settlement in ways that defined and limited social access (Fletcher 1995), arguably through contested rights in property.

The marking of objects can also be associated with ownership and associated rights and responsibilities. Markings are quite widespread, including the elaborate institutional and individual seals, sealings, and bullae recovered from several thousand years of state (Uruk) and prestate (Samarran and Ubaid) societies in the ancient Middle East (Ferioli et al 1994, Schmandt-Besserat 1992), historical owner's and maker's marks with crests and initials (Noël-Hume 1970), and prehistoric maker's marks (Donnan 1971). For the Middle East, an evolving technology of property rights from the sealings and seals to the writing tablets indicated the emergence of a state legal system with guaranteed property rights (Lamberg-Karlovsky 1999).

The simple style and forms of objects may well denote property rights of use and transfer. Based on an admittedly heuristic typology, objects can be conceptualized as produced in a number of ways. Objects produced by individuals for the household may be idiosyncratic. Objects produced by specialists are different depending on the type of specialist involved (Brumfiel & Earle 1987). Independent specialists produce standardized products that are destined for exchange. The standardization would increase manufacturing efficiency, thus lowering production cost, and would carry an implied guarantee of uniform quality. Such goods destined for exchange assume rights of legitimate transfer (and compensation). In contrast, attached specialists produce unique objects for a patron; these are objects destined for close control and limited transfer, the "inalienable objects" (LeCount 1999, Weiner 1992).

CONCLUDING REMARKS

How do we define and measure the development of property rights in prehistory? Each technique used to define property is not unambiguous; alternative interpretations are possible, and the goals of the now dead may as well have been to obscure as to advertise exclusive ownership (Johnson 1991). That said, I want to emphasize that a wide range of ways to describe property rights exists for archaeologists. These offer independent measures that associate land and objects with people. We know that property rights are a critical dimension of the evolution and materialization of social institutions and political relationships. Archaeologists must investigate property cautiously but with whatever means available.

For the future, the goal must be to regain the processualists' optimism that the past is knowable if we can only be creative, and critical, with our methods (Gilman 1998). The means can be developed if the will exists, and the will must exist because

of the theoretical importance of the subject. We cannot understand the evolution of human societies without an understanding of emerging and manipulated property rights with archaeology to investigate the range of developmental trajectories that history has witnessed. In concluding, I propose three research questions on property that come out of the literature reviewed.

1. Do landed property rights become more clearly established with intensification of agriculture? Cross-cultural work suggests a correlation between intensification and the development of concrete rights associated with groups and households (Adler 1996, Collier 1975, Stone 1994, Netting 1993).
2. Does social stratification generally emerge via property rights progressively defended by local groups, chiefly warriors, a military, and a legal code (Hudson 1998)? The logic is that social stratification depends on a means to control human labor and generate a financing surplus. The development of landed property is suggested as a means of institutional finance (Carrasco 1978, Earle 1991, 1998, McAnany 1998).
3. Can the emergent institutions of chiefdoms and states be financed based on alternative political economies with contrasting patterns of property rights in land and objects? The real question is whether wealth can be concentrated by control over networks of prestige goods and market exchanges in contrast to corporate ownership of subsistence facilities (Blanton et al 1996, D'Altroy & Earle 1985). For states, the distinction is between Asiatic and mercantile modes of production and exchange (Friedman & Rowlands 1977). The role of developing monetary systems suggested the eventual creation of land as alienable through market exchange, perhaps preceded by debt transfers (Hudson 1996, 1998).

ACKNOWLEDGMENTS

I thank Elizabeth Brumfiel, Antonio Gilman, Robert Hunt, Patricia McAnany, Cynthia Robin, Gil Stein, and John Steinberg for their essential help assembling references and commenting on draft manuscripts.

Visit the Annual Reviews home page at www.AnnualReviews.org

LITERATURE CITED

Acheson JM, ed. 1994. *Anthropology and Institutional Economics.* Lanham, MD: Univ. Press Am.

Adams RMcC. 1966. *The Evolution of Urban Society.* Chicago: Aldine

Adler MA. 1996. Land tenure, archaeology, and the ancestral Pueblo social landscape. *J. Anthropol. Arch.* 15:337–71

Appell GN. 1983. Methodological problems with the concepts of corporation, corporate social grouping, and cognatic descent group. *Am. Ethnol.* 10:302–11

Arnold CJ. 1982. Stress as a stimulus for socio-economic change: Anglo-Saxon England in the seventh century. See Renfrew & Shennan 1982, pp. 124–31

Barfield L, Chippindale C. 1997. Meaning in the late prehistoric rock-engraving of Mont Bego, Alpes-Maritimes, France. *Proc. Prehist. Soc.* 63:103–28

Barker G, ed. 1999. *Companion Encyclopedia of Archaeology.* London: Routledge

Barton RF. 1919. *Ifugao Law*, Vol. 15. Berkeley: Univ. Calif. Publ. Anthro.

Beck L, ed. 1995. *Regional Approaches to Mortuary Analysis.* New York: Plenum

Bell D. 1998. The social relations of property and efficiency. See Hunt & Gilman 1998, pp. 29–45

Bernbeck R. 1995. Lasting alliances and emerging competition: economic developments in early Mesopotamia. *J. Anthropol. Arch.* 14:1–25

Binford LR. 1971. Mortuary practices, their study and potential. See Brown 1971, pp. 6–29

Bintliff J. 1982. Settlement patterns, land tenure and social structure: a diachronic model. See Renfrew & Shennan 1982, pp. 106–11

Bintliff J. 1999. Settlement and territory. See Barker 1999, pp. 505–45

Blanton RE, Feinman GM, Kowalewski SA, Peregrine PN. 1996. A dual-processual theory for the evolution of Mesoamerican civilization. *Curr. Anthropol.* 37:1–14

Bloch M. 1989. *Ritual, History and Power.* London: Althone

Bowen HC. 1975. Pattern and interpretation, a view of the Wessex landscape from Neolithic to Roman times. In *Recent Work in Rural Archaeology*, ed. PJ Fowler, pp. 44–56. Bradford-on-Avon, UK: Moonraker

Bowen HC, Fowler PJ, eds. 1978. *Early Land Allotment.* Oxford, UK: Br. Archaeol. Rep.

Bradley R. 1984. *The Social Foundations of Prehistoric Britain: Themes and Variations in the Archaeology of Power.* London: Longham

Bradley R. 1998a. *Rock Art and the Prehistory of Atlantic Europe: Signifying the Land.* London: Routledge

Bradley R. 1998b. *The Significance of Monuments: On the Shaping of Human Experience in Neolithic and Bronze Age Europe.* London: Routledge

Brown JA, ed. 1971. *Approaches to the Social Dimensions of Mortuary Practices*, Memoir 25. Washington, DC: Soc. Am. Arch.

Brown JA. 1981. The search for rank in prehistoric burials. See Chapman et al 1981, pp. 27–37

Brown JA. 1995. On mortuary analysis, with special reference to the Saxe-Binford research program. See Beck 1995, pp. 3–28

Brumfiel E. 1980. Specialization, market exchange, and the Aztec state. *Curr. Anthropol.* 21:459–78

Brumfiel E. 1987. Elite and utilitarian crafts in the Aztec state. See Brumfiel & Earle 1987, pp. 102–18

Brumfiel E, Earle TK, eds. 1987. *Specialization, Exchange, and Complex Societies.* Cambridge, UK: Cambridge Univ. Press

Butlin RA. 1982. *The Transformation of Rural England, c. 1580–1800: A Study in Historical Geography.* Oxford, UK: Oxford Univ. Press

Byock JL. 1988. *Medieval Iceland: Society, Sagas, and Power.* Berkeley: Univ. Calif. Press

Byrne BT, Brown BJ. 1998. *Questions, questions, questions: To what extent do cultural materialism, evolutionary ecology and neo-institutional economics ask compatible questions?* Presented at Annu. Meet. Anthropol. Assoc., 97th, Philadelphia

Carneiro R. 1970. A theory of the origin of the state. *Science* 169:739–79

Carneiro R. 1981. The chiefdom as precursor of the state. In *The Transition to Statehood in the New World*, ed. G Jones, R Krautz, pp. 39–79. Cambridge, UK: Cambridge Univ. Press

Carrasco P. 1978. La economía del México prehispánico. In *Economía Politica e Ideología en el México Prehispanico*, ed. P Carrasco,

J Broda, pp. 15–76. Mexico City: Nueva Imagen

Cashdan E. 1983. Territoriality among human foragers: ecological models and application to four Bushman groups. *Curr. Anthropol.* 24:443–63

Chapman R. 1981. The emergence of formal disposal areas and "the problem" of megalithic tombs in prehistoric Europe. See Chapman et al 1981, pp. 71–81

Chapman R. 1990. *Emergence of Complexity. The Late Prehistory of South-east Spain, Iberia and the West Mediterranean.* Cambridge, UK: Cambridge Univ. Press

Chapman R. 1995. Ten years after—megaliths, mortuary practices, and the territorial model. See Beck 1995, pp. 29–51

Chapman R, Kinnes I, Randsborg K, eds. 1981. *The Archaeology of Death.* Cambridge, UK: Cambridge Univ. Press

Childe VG. 1942. *What Happened in History?* Harmondsworth, UK: Penguin

Collier GA. 1975. *Fields of Tzotzil: The Ecological Basis of Tradition in Highland Chiapas.* Austin: Univ. Tex. Press

Collis J. 1982. Gradual growth and sudden change—urbanisation in temperate Europe. See Renfrew & Shennan 1981, pp. 73–78

Conrad GW, Demarest AA. 1984. *Religion and Empire.* Cambridge, UK: Cambridge Univ. Press

Costin CL. 1998. Concepts of property and access to nonagricultural resources in the Inka empire. See Hunt & Gilman 1998, pp. 119–37

Costin CL, Earle TK. 1989. Status distinction and legitimization of power as reflected in changing patterns of consumption in late prehispanic Peru. *Am. Antiq.* 54:691–714

D'Altroy TN, Earle TK. 1985. Staple finance, wealth finance, and storage in the Inca political economy. *Curr. Anthropol.* 26:187–206

DeMarrais E, Castillo LJ, Earle TK. 1996. Ideology, materialization, and power strategies. *Curr. Anthropol.* 37:15–31

Demsetz H. 1967. Towards a theory of property rights. *Am. Econ. Assoc.* 57:347–59

Diakonoff IM. 1982. The structure of Near Eastern society before the middle of the second millennium B.C. *Oikumene* 3:7–100

Donnan CB. 1971. Ancient Peruvian potters' marks and their interpretation through ethnographic analogy. *Am. Antiq.* 36:460–66

Durrenberger EP. 1998. Property, state, and self-destruction in Medieval Iceland. See Hunt & Gilman 1998, pp. 171–86

Dyson-Hudson R, Smith EA. 1978. Human territoriality: an ecological reassessment. *Am. Anthropol.* 80:21–41

Earle TK. 1978. *Economic and Social Organization of a Complex Chiefdom. The Halelea District, Kaua'i, Hawaii.* Ann Arbor: Mus. Anthropol., Univ. Mich.

Earle TK. 1980a. A model of subsistence change. In *Modeling Change in Prehistoric Subsistence Economies*, ed. TK Earle, A Christenson, pp. 1–29. New York: Academic

Earle TK. 1980b. Prehistoric irrigation in the Hawaiian Islands: an evaluation of evolutionary significance. *Arch. Phys. Anthropol. Ocean.* 15:1–28

Earle TK. 1987. Chiefdoms in archaeological and ethnohistorical perspectives. *Annu. Rev. Anthropol.* 16:279–308

Earle TK. 1991. Property rights and the evolution of chiefdoms. In *Chiefdoms: Power, Economy and Ideology*, ed. TK Earle, pp. 71–99. Cambridge, UK: Cambridge Univ. Press

Earle TK. 1997. *How Chiefs Come to Power: The Political Economy in Prehistory.* Stanford, CA: Stanford Univ. Press

Earle TK. 1998. Property rights and the evolution of Hawaiian chiefdoms. See Hunt & Gilman 1998, pp. 89–118

Earle TK. 1999. Production and exchange in prehistory. See Barker 1999, pp. 608–35

Earle TK, Preucel RW. 1987. Processual archaeology and the radical critique. *Curr. Anthropol.* 28:501–37

Edzard DO. 1996. Private land ownership and its relation to "god" and "state" in Sumer and early Mesopotamia. See Hudson & Levine 1996, pp. 109–28

Ellison A, Harriss J. 1972. Settlement and land

use in prehistory and early history of southern England: a study based on locational models. In *Models in Archaeology*, ed. DL Clarke, pp. 911–62. London: Methuen

Engels F. 1972 [1884]. *The Origin of the Family, Private Property and the State.* New York: Pathfinder

Ericson J. 1981. *Exchange and Production Systems in Californian Prehistory.* Oxford, UK: Br. Archaeol. Rep.

Farriss NM. 1984. *Mayan Society under Colonial Rule: The Collective Enterprise of Survival.* Princeton, NJ: Princeton Univ. Press

Feil DK. 1987. *The Evolution of Highland Papua New Guinea Societies.* Cambridge, UK: Cambridge Univ. Press

Feinman GM, Upham S, Lightfoot KG. 1981. The production step measure: an ordinal index of labor input in ceramic manufacture. *Am. Antiq.* 46:871–84

Fernández-Posse D, Sánchez-Palencia J. 1998. Las cumunidades campesinas en la cultura casteña. *Trab. Prehist.* 55:127–50

Ferioli P, Fiandra E, Fissore G, Frangipane M. 1994. *Archives Before Writing.* Rome: Scriptorum

Firth R. 1939. *Primitive Polynesian Economy.* London: Routledge, Kegan Paul

Flannery KV. 1976. Empirical determination of site catchments in Oaxaca. In *The Early Mesoamerican Village*, ed. K Flannery, pp. 103–17. New York: Academic

Fleming A. 1973. Tombs for the living. *Man* 8:177–93

Fleming A. 1988. *The Dartmoor Reaves: Investigating Prehistoric Land Divisions.* London: Batsford

Fleming A. 1989. The genesis of coaxial field systems. In *What's New? A Closer Look at the Process of Innovation*, ed. SE Van de Leeuw, R Torrence, pp. 63–81. London: Hyman

Fletcher R. 1995. *The Limits of Settlement Growth.* Cambridge, UK: Cambridge Univ. Press

Fried MH. 1967. *The Evolution of Political Society: An Essay in Political Anthropology.* New York: Random House

Friedman J, Rowlands MJ. 1977. Notes towards an epigenetic model of the evolution of 'civilization.' In *The Evolution of Social Systems*, ed. J Friedman, MJ Rowlands, pp. 201–76. London: Duckworth

Gelb IJ, Steinkeller P, Whiting RM. 1991. *Earliest Land Tenure Systems in the Near East: Ancient Kudurrus.* Chicago: Orient. Inst.

Gell A. 1992. Inter-tribal commodity barter and reproductive gift-exchange in old Melanesia. In *Barter, Exchange and Value: An Anthropological Approach*, ed. C Humphrey, S Hugh-Jones, pp. 142–68. Cambridge, UK: Cambridge Univ. Press

George H. 1879. *Progress and Poverty.* San Francisco: Hinton

Gibb JG. 1996. *The Archaeology of Wealth: Consumer Behavior in English America.* New York: Plenum

Gilman A. 1976. Bronze Age dynamics in southeastern Spain. *Dialect. Anthropol.* 1:307–19

Gilman A. 1984. Explaining the Upper Paleolithic revolution. See Spriggs 1984, pp. 115–26

Gilman A. 1998. Reconstructing property systems from archaeological evidence. See Hunt & Gilman 1998, pp. 215–33

Gilman A, Thornes JB. 1985. *Land-use and Prehistory in South-east Spain.* London: Allen & Unwin

Gleason KL. 1994. To bound and to cultivate: Introduction. *The Archaeology of Garden and Field*, ed. N Miller, K Gleason, pp. 1–24. Philadelphia: Univ. Penn. Press

Goody J. 1976. *Production and Reproduction.* Cambridge, UK: Cambridge Univ. Press

Green R. 1980. *Makaha before 1880 AD: Makaha Valley Historical Summary Report 5.* Honolulu, HI: Bishop Mus.

Haas J. 1982. *The Evolution of the Prehistoric State.* New York: Columbia Univ. Press

Haas J, Pozorski S, Pozorski T. 1987. *The Origin and Development of the Andean State.* Cambridge, UK: Cambridge Univ. Press

Hallowell AI. 1943. The nature and function of property as a social institution. *J. Legis. Polit. Sociol.* 1:115–38

Hanks WF. 1990. *Referential Practice: Language and Live Space among the Maya.* Chicago: Univ. Chicago Press

Hann CM, ed. 1998. *Property Relations: Renewing the Anthropological Tradition.* Cambridge, UK: Cambridge Univ. Press

Harvey HR. 1984. Aspects of land tenure in ancient Mexico. See Harvey & Prem 1984, pp. 83–102

Harvey HR, ed. 1991. *Land and Politics in the Valley of Mexico.* Albuquerque: New Mexico Univ. Press

Harvey HR, Prem HJ, eds. 1984. *Explorations in Ethnohistory.* Albuquerque: New Mexico Univ. Press

Haselgrove C. 1982. Wealth, prestige and power: the dynamics of late Iron Age political centralisation in south-east England. See Renfrew & Shennan 1982, pp. 79–88

Hastorf C. 1993. *Agriculture and the Onset of Political Inequality before the Inka.* Cambridge, UK: Cambridge Univ. Press

Hayden B. 1995. Pathways to power: principles for creating socioeconomic inequalities. In *Foundations of Inequality*, ed. TD Price, GM Feinman, pp. 15–86. New York: Plenum

Hedeager L. 1992. *Iron Age Societies: From Tribe to State in Northern Europe, 500 B.C. to A.D. 700.* Oxford, UK: Blackwell

Hedeager L. 1994. Warrior economy and trading economy in Viking-age Scandinavia. *J. Eur. Arch.* 2:130–48

Helms M. 1979. *Ancient Panama: Chiefs in Search of Power.* Austin: Tex. Univ. Press

Herskovits MH. 1940. *The Economic Life of Primitive Peoples.* New York: Knopf

Hodder I, Orton C. 1976. *Spatial Analysis in Archaeology.* Cambridge, UK: Cambridge Univ. Press

Hoebel EA. 1954. *The Law of Primitive Man.* Cambridge, MA: Harvard Univ. Press

Hudson M. 1996. The dynamics of privatization, from the Bronze Age to the present. See Hudson & Levine 1996, pp. 33–73

Hudson M. 1998. Private land ownership, debt, and fiscal crisis in the ancient Near East. See Hunt & Gilman 1998, pp. 139–69

Hudson M, Levine BA, eds. 1996. *Privatization in the Ancient Near East and Classical World.* Cambridge, UK: Peabody Mus.

Hudson M, Levine BA, eds. 1999. *Urbanization and Land Ownership in the Ancient Near East.* Cambridge, UK: Peabody Mus.

Hunt RC. 1997. Property. In *The Dictionary of Anthropology*, ed. T Barfield, pp. 378–79. Oxford, UK: Blackwell

Hunt RC. 1998. Properties of property: conceptual issues. See Hunt & Gilman 1998, pp. 7–27

Hunt RC, Gilman A, eds. 1998. *Property in Economic Context.* Lanham, MD: Univ. Press Am.

Johnson AW, Earle TK. 1987. *The Evolution of Human Societies.* Stanford, CA: Stanford Univ. Press

Johnson MH. 1991. Enclosure and capitalism: the history of a process. In *Processual and Postprocessual Archaeologies: Multiple Ways of Knowing the Past*, ed. RW Preucel, pp. 159–67. Carbondale: S. Ill. Univ., Cent. Archaeol. Invest.

Junker LL. 1999. *Raiding, Trading, and Feasting: The Political Economy of Philippine Chiefdoms.* Honolulu: Hawaii Univ. Press

Keeley L. 1996. *War before Civilization.* New York: Oxford Univ. Press

Kirch PV. 1994. *The Wet and the Dry.* Chicago: Univ. Chicago Press

Kolb MJ. 1994. Monumentality and the rise of religious authority in precontact Hawai'i social evolution. *Curr. Anthropol.* 35:521–47

Kolb MJ. 1997. Labor mobilization, ethnohistory, and the archaeology of community in Hawai'i. *J. Arch. Methods Theory* 4:265–85

Kristiansen K. 1984. Ideology and material culture: an archaeological perspective. See Spriggs 1984, pp. 72–100

Kristiansen K. 1987. From stone to bronze: the evolution of social complexity in northern Europe 2300–1200 B.C. See Brumfiel & Earle 1987, pp. 30–51

Lamberg-Karlovsky CC. 1999. Households, land tenure, and communication systems in the 6th–4th millennia of greater Mesopotamia. See Hudson & Levine 1999, pp. 167–201

LeCount LJ. 1999. Polychrome pottery and political strategies in Late and Terminal Classic lowland Maya society. *Lat. Am. Antiq.* 10:239–58

Levine BA. 1996. Farewell to the ancient Near East: evaluating biblical references to ownership of land in comparative perspective. See Hudson & Levine 1996, pp. 223–52

Malinowski B. 1935. *Coral Gardens and their Magic.* London: Allen, Unwin

McAnany PA. 1995. *Living with the Ancestors: Kinship and Kingship in Ancient Mayan Society.* Austin: Tex. Univ. Press

McAnany PA. 1998. Obscured by the forest: property and ancestors in lowland Maya society. See Hunt & Gilman 1998, pp. 73–87

Morgan LH. 1877. *Ancient Society.* Chicago: Kerr

Morrison KD, Lycett MT. 1994. Centralized power, centralized authority? Ideological claims and archaeological patterns. *Asian Perspect.* 33:327–50

Munzer S. 1990. *A Theory of Property.* Cambridge, UK: Cambridge Univ. Press

Neale WC. 1998. Property: law, cotton-pickin' hands, and implicit cultural imperialism. See Hunt & Gilman 1998, 47–64

Netting R. 1993. *Smallholders, Householders.* Stanford, CA: Stanford Univ. Press

Niles SA. 1987. *Callachaca: Style and Status in an Inca Community.* Iowa City: Iowa Univ. Press

Noël-Hume I. 1970. *A Guide to the Artifacts of Colonial America.* New York: Knopf

North DC. 1981. *Structure and Change in Economic History.* New York: Norton

North DC. 1990. *Institutions, Institutional Change, and Economic Performance.* Cambridge, UK: Cambridge Univ. Press

North DC, Thomas RP. 1977. The first economic revolution. *Econ. Hist. Rev.* 30:229–41

Orejas A, Sastre Prats I. 1999. Fiscalité et organisation du territoire dans le Nord-Oust de la Pénisule Ibérique. *Dial. Hist. Anc.* 25:159–88

O'Shea JM. 1981. Social configurations and the archaeological study of mortuary practices: a case study. See Chapman et al 1981, pp. 39–52

O'Shea JM. 1984. *Mortuary Variability: An Archaeological Investigation.* New York: Academic

O'Shea JM. 1996. *Villagers of the Maros: A Portrait of an Early Bronze Age Society.* New York: Plenum

Postgate JN. 1992. *Early Mesopotamia: Society and Economy at the Dawn of History.* London: Routledge

Randsborg K. 1980. *The Viking Age in Denmark.* London: Duckworth

Randsborg K. 1982. Rank, rights and resources: an archaeological perspective from Denmark. See Renfrew & Shennan 1982, pp. 132–39

Renfrew C. 1973. Monuments, mobilisation, and social organisation in Neolithic Wessex. In *The Explanation of Culture Change: Models in Prehistory*, ed. C Renfrew, pp. 539–58. London: Duckworth

Renfrew C, Shennan S, eds. 1982. *Ranking, Resource and Exchange.* Cambridge, UK: Cambridge Univ. Press

Restall M. 1997. *The Maya World: Yucatec Culture and Society, 1550–1850.* Stanford, CA: Stanford Univ. Press

Robin C. 1999. *Towards an archaeology of everyday life: Maya farmers of Chan Noohol and Dos Chombitas Cik'in, Belize.* PhD thesis. Univ. Penn., Philadelphia. 615 pp.

Sahlins M. 1968. *Tribesmen.* Engelwood Cliffs, NJ: Prentice-Hall

Saxe AA. 1970. *Social dimensions of mortuary practices.* PhD thesis. Univ. Mich., Ann Arbor

Schmandt-Besserat D. 1992. *Before Writing.* Austin: Tex. Univ. Press

Service E. 1962. *Primitive Social Organization.* New York: Random House

Shennan SJ. 1999. Cost, benefit and value in the organization of early European copper production. *Antiquities* 73:352–63

Smith ME. 1987. Household possessions and wealth in agrarian states. *J. Anthropol. Arch.* 6:297–335

Solomon F. 1991. *The Huarochirí Manuscript.* Austin: Tex. Univ. Press

Spencer-Wood SM, ed. 1987. *Consumer Choice in Historic Archaeology.* New York: Plenum

Spratt DA. 1991. Recent British research on prehistoric territorial boundaries. *J. World Prehist.* 5:439–80

Spriggs M, ed. 1984. *Marxist Approaches in Archaeology.* Cambridge, UK: Cambridge Univ. Press

Steinberg JM. 1997. *The economic prehistory of Thy, Denmark: a study of the changing value of flint based on a methodology of the plowzone.* PhD thesis. Univ. Calif., Los Angeles. 543 pp.

Stone GD. 1994. Agricultural intensification and perimetrics: ethnoarchaeological evidence from Nigeria. *Curr. Anthropol.* 35:317–24

Stone GD, Downum CE. 1999. Non-Boserupian ecologies and agricultural risk: ethnic politics and land control in the arid Southwest. *Am. Anthropol.* 101:113–28

Sweet L. 1965. Camel pastoralism in North Arabia and the minimal camping unit. In *Man, Culture, and Animals*, ed. A Leeds, AP Vayda, pp. 129–52. Washington, DC: AAAS Publ.

Thurston TL. 2000. *Landscapes of Power, Landscapes of Conflict.* New York: Plenum. In press

Van De Mieroop M. 1999. Thoughts on urban real estate in ancient Mesopotamia. See Hudson & Levine 1999, pp. 253–87

Vita-Finzi C, Higgs ES. 1970. Prehistoric economy in the Mt. Carmel area of Palestine: site catchment analysis. *Proc. Prehist. Soc.* 36:1–37

Wachtel N. 1977. *The Vision of the Vanquished.* Transl. B Reynolds, S Reynolds. Hassocks, Sussex, UK: Harvester (From French)

Waldron J. 1988. *The Rights of Private Property.* Oxford, UK: Clarendon

Waldron J, Abrams EM. 1999. Adena burial mounds and inter-hamlet visibility: a GIS approach. *Midcont. J. Arch.* 24:97–111

Weiner A. 1992. *Inalienable Possessions: The Paradox of Keeping-While-Giving.* Berkeley: Univ. Calif. Press

Wiessner P. 1982. Beyond willow smoke and dogs' tails: a comment on Binford's analysis of hunter-gatherer settlement systems. *Am. Antiq.* 47:171–78

Williams BJ. 1984. Mexican pictorial cadastral registers. See Harvey & Prem 1984, pp. 103–25

Williams BJ, Harvey HR. 1988. Content, provenience, and significance of the Codex Vergara and the Códice de Santa María. *Am. Antiq.* 53:337–51

Williamson OE. 1985. *The Economic Institutions of Capitalism.* New York: Free Press

Wilson PJ. 1988. *The Domestication of the Human Species.* New Haven, CT: Yale Univ. Press

Wolf E. 1982. *Europe and the People without History.* Berkeley: Univ. Calif. Press